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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/804,655

03/19/2004

Jack B. Smith

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04/08/2005

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EXAMINER

LEE, JINHEE J

ART UNIT

PAPER NUMBER

2831

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/804,655

Applicant(s)

SMITH ET AL.

Examiner

Jinhee J. Lee

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2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 15-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of election of Species b in Paper No. 0305 is acknowledged. The traversal is on the ground(s) that claim 1 is generic. This is not found persuasive because species designated in the restrict is still found to be distinct

Claims 12-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected group, there being no allowable generic or linking claim.

The requirement is still deemed proper and is therefore made FINAL.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the aluminum coating of claims 18 and 19 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. **For the purposes of examination, examiner has assumed the aluminum coating to be as shown in figures 2 and 4, if the aluminum coating is another embodiment, the applicant needs to withdraw these claims.**

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after

the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-3, 5-11 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klug et al. (5304739) in view of Sato (NPL-document submitted by the applicant on IDS dated 10/6/04).

Re claim 1, Klug et al. substantially discloses a high-voltage transmission cable comprising: a conductor (3, outer conductor), an electrically insulative sheath (2), and a carbon core (1), wherein said conductor surrounds said sheath and said sheath surrounds said carbon core. Klug et al. does not explicitly disclose that the conductor

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is an aluminum conductor. However, Sato teaches of using an aluminum conductor as an outer conductor (see figure 1 and page 1 under General). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the aluminum conductor of Sato on the cable of Klug et al. in order to provide outer conducting element for a coaxial cable.

Re claim 2, note that the device of Klug et al. includes, wherein said sheath is made of a material capable of withstanding an operating temperature greater than 150 degrees C. (TEFLON, see column 4 line 67 according to the numbering in the middle).

Re claim 3, note that the device of Klug et al. includes, wherein said sheath is made of PTFE (TEFLON, see column 4 line 67 according to the numbering in the middle).

Re claim 5, note that the device of Klug et al. includes, wherein said sheath has a low coefficient of friction and provides a slip plane to reduce wear between said aluminum conductor and said carbon core (TEFLON, see column 4 line 67 according to the numbering in the middle).

Re claim 6, Klug et al. substantially discloses a high-voltage transmission cable as set forth in claim 1 above. Klug et al. does not explicitly disclose that the carbon core comprises a carbon fiber reinforced composite rod. However, Sato teaches of using a carbon-fiber reinforced composite rod (see figure 1 and page 1 under General). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the carbon-fiber reinforced composite rod of Sato on the cable of Klug et al. in order to provide a lighter weighed cable.

Re claim 7, note that the device of Sato teaches, wherein said carbon-fiber reinforced composite rod comprises carbon fiber pultruded in a high-temperature polymeric material (see table 2).

Re claim 8, note that the device of Sato teaches, wherein said high-temperature polymeric material includes materials from the group consisting of thermoset polymers, thermoplastic polymers, and combinations thereof (see table 2).

Re claim 9, note that the device of Sato teaches, wherein said carbon core includes a plurality of said carbon-fiber reinforced composite rods (see figure 1).

Re claim 10, Klug et al. modified by Sato substantially discloses device as set forth in claim 9 above. Klug et al./Sato does not explicitly disclose wherein one or more of said rods are substantially trapezoidal in shape. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the trapezoidal rods as the core, since it has been held that more than mere change in shape or configuration is necessary for patentability. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Re claim 11, note that the device of Sato teaches, wherein said carbon core is a bundle of said plurality of said carbon-fiber reinforced composite rods, and wherein said rods are twisted slightly axially (see figure 1).

Re claim 15, note that the device of Klug et al. includes, wherein said conductor includes a plurality of rods (see figure 1).

Re claim 16, note that the device of Klug et al. includes, wherein said plurality of rods are twisted slightly relative to an axial direction of said cable (see figure 1).

Re claim 17, note that the device of Klug et al. includes, wherein said plurality of rods are wrapped axially about said core and said sheath (see figure 1).

Re claim 18, note that the device of Klug et al. includes, wherein said conductor is a sectioned coating over said sheath and said carbon core (coating as defined by drawing of figures 2 and 4 as disclosed by the applicant, see figure 1 of Klug et al.)

Re claim 19, note that the device of Klug et al. includes, wherein said sectioned coating is applied over said sheath and said carbon core (coating as defined by drawing of figures 2 and 4 as disclosed by the applicant, see figure 1 of Klug et al.).

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Klug et al. in view of Sato, as applied to claim 2 above, and further in view of Bortz.

Re claim 4, the device of Klug et al. as modified by teachings of Sato discloses a transmission cable as set forth in claim 2 above. It does not explicitly disclose, wherein said sheath is made of a material from the group consisting of poly-paraphenylene terephthalamide, poly p-phenylene, aramid fiber, and combinations thereof. However, Bortz teaches of a sheath made of a material from the group consisting of poly-paraphenylene terephthalamide, poly p-phenylene, aramid fiber, and combinations thereof (aramid, see column 15 lines 26-28). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the sheath of Bortz on the cable of Klug et al./Sato in order to provide anti-friction.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jinhee J. Lee whose telephone number is 571-272-1977. The examiner can normally be reached on M, T, Th and F at 6:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on 571-272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jinhee J Lee
Patent Examiner
Art Unit 2831

